Sewage Pump

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Operating Instructions and Parts Manual — **Models SEL40 and SEL50**

Description

A sewage system consists of a pump, control switch, and a basin for use in applications where less than six toilets (units) are discharged into the basin. The system is generally controlled by a float switch with a plug-in-plug which accepts the pump plug and in turn plugs into a 115 volt outlet.

The float switch is a wide angle differential switch that rises with the liquid level and turns the pump on. As the liquid level decreases the float lowers and turns the pump off. This pump is intended for use in domestic sewage lift stations. It is suitable for pumping sewage, effluent, wastewater, groundwater and other nonexplosive, non-corrosive liquids with up to 2 inch solids.

Safety Guidelines

This manual contains information that is very important to know and understand. This information is provided for SAFETY and to PREVENT EQUIPMENT PROBLEMS. To help recognize this information, observe the following symbols.

⚠DANGER ***Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.***

⚠WARNING ***Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.***

⚠CAUTION ***Caution indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury.***

NOTICE ***Notice indicates important information, that if not followed, may cause damage to equipment.***

General Safety Information

1. Know the pump application, limitations, and potential hazards.

⚠WARNING

Do not use to pump flammable or explosive fluids such as gasoline, fuel oil, kerosene, etc. Do not use in flammable and/or explosive atmospheres. Use pump only with liquids compatible with pump component materials. Failure to follow this warning can result in personal injury and/or property damage.

2. Make certain that the power source (electric motor) conforms to the requirements of the equipment.

⚠DANGER

Disconnect power before servicing. If the power disconnect is out of sight, lock in the open position and tag it to prevent unexpected application of power. Failure to do so could result in fatal electrical shock!

3. Release all pressure within the system before servicing any component.
4. Drain all liquids from the system before servicing.
5. Secure the discharge line before starting the pump. An unsecured discharge line will whip, possibly causing personal injury and/or property damage.
6. Check hoses for weak and worn condition before each use, making certain that all connections are secure.
7. Periodically inspect the pump and system components. Perform routine maintenance as required (See Maintenance Section).
8. Provide a means of pressure relief for pumps whose discharge line can be shut-off or obstructed.
9. Personal Safety:
   a. Wear safety glasses at all times when working with pumps.
   b. Keep work area clean, uncluttered and properly lighted; replace all unused tools and equipment.
   c. Keep visitors a safe distance from the work area. Make workshop child-proof with padlocks, master switches, and by removing starter keys.
10. When wiring an electrically driven pump such as this, follow all electrical and safety codes, as well as the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

⚠WARNING

Risk of electric shock! Never connect the green (or green and yellow) wire to a live terminal!

Specifications

Power supply requirements	115V, 60 hz
Circuit requirements	15 amps (min)
Motor duty	Intermittent
Motor	115V, 1 Phase, 1725 RPM
Horsepower	4/10 (SEL40) 1/2 (SEL50)
Motor full load	12 amps
Liquid temperature range	40°F to 120°F
Max. operating position	45° from vertical
Dimensions	13-1/2" x 11"
Intake	2"
Discharge	2" NPT female, 3" NPT male
Cut-in level (factory set)	18"
Cut-out level (factory set)	10"
Differential	8"
Switch	90° wide angle mechanical tether switch
Power cord	16 gauge 3 conductor w/plug

Construction

Motor body material	Cold rolled steel
Motor housing	Glass reinforced polypropylene
Volute	Glass reinforced ABS
Impeller	Glass reinforced PBT
Seal plate	Cast Iron
Shaft seal	End faced mechanical

Performance

	GALLONS PER HOUR AT TOTAL HEAD IN FEET		
Model	10	15	20
SEL40	3700	1350	0
SEL50	6420	4200	1500

REMINDER: Keep your dated proof of purchase for warranty purposes! Attach it to this manual or file it for safekeeping.

© 2002

11. This equipment is only for use on 120 volt (single-phase) and is equipped with an approved 3-conductor cord and 3-prong, grounding-type plug as shown in Figure 1.

To reduce the risk of electric shock, the motor must be securely and adequately grounded. This can be accomplished by the following:

1. Inserting plug directly into a properly installed and grounded 3-prong, grounding-type receptacle (as shown in Figure 1).

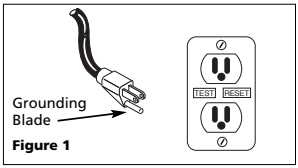


Figure 1

2. Permanently wiring the unit with a grounded, metal raceway system.
3. Other suitable means.

Where a 2-prong wall receptacle is encountered, it must be replaced with a properly grounded 3-prong receptacle installed in accordance with the NEC and local codes and ordinances.

12. All wiring should be performed by a qualified electrician.
13. It is strongly recommended that this unit is plugged into a Ground Fault Circuit Interrupter (GFCI). Consult a local electrician for installation and availability.

⚠WARNING ***The pump motor is equipped with automatic resetting thermal protector and may restart unexpectedly. Protector tripping is an indication of motor overloading as a result of operating the pump at low heads (low discharge restriction), excessively high or low voltage, inadequate wiring, incorrect motor conditions, or a defective motor or pump.***

14. This pump is designed to transfer water in cycles. Using this pump in a continuous duty application by manipulating the switch to stay on, will effect the performance and the life of the product.
15. Protect electrical cord from sharp objects, hot surfaces, oil, and chemicals. Avoid kinking the cord. Replace or repair damaged or worn cords immediately. Use wire of adequate size to minimize voltage drop at the motor.
16. Do not handle a pump or pump motor with wet hands or when standing on a wet or damp surface, or in water.
17. Do not hang this product by the carry handle. Sewage pumps should be set firmly on their legs and supported by rigid piping. This eliminates twisting and damage during pump operation.
18. **Do not use an extension cord.**

⚠DANGER

Do not walk on wet area until all power has been turned off. If the shut-off box is in basement, call the electric company to shut-off service to the house, or call the local fire department for instructions. Remove pump and repair or replace. Failure to follow this warning can result in fatal electrical shock.

Installation

NOTICE ***In any installation where property damage and/or personal injury might result from an inoperative or leaking pump due to power outages, discharge line blockage or any other reason, use a backup system(s).***

1. Thread the discharge pipe or pipe nipple into the discharge connection.
2. If a check valve is used in a solids handling system mount the check valve in a horizontal position or at a 45° angle with the valve pivot on top. In a vertical position, solids will tend to lodge on the valve flapper and can prevent it from opening.
3. Drill a 1/16" hole in the discharge pipe approximately 1" to 2" above the pump discharge when a check valve is used. The hole prevents air locking of the pump at the initial start-up and if it should lose prime.
4. A gate valve should be installed in the system after the check valve. This gate valve should be a full port valve which will pass 2" solids or as required by state and local codes. This gate valve permits removal of the pump and/or check valve for servicing.
5. A union should be installed between the check valve and the pump so the pump can be removed with least disturbance of the piping.
6. The pump has a detachable tether switch with a piggyback plug (see figure 3). The length of the tether (distance of cord from float to clamp) should not be set shorter than 3-1/4 inches and should not be used in a basin smaller than 14 inches in diameter. If using a differential other than the factory setting, be sure when the pump shuts off at least 4" of fluid is left in the basin so the impeller remains submerged.
7. When a tether switch is used, rigid discharge pipe is required. If the pump is allowed to move, the tether switch could be restricted by the basin wall, preventing the pump from operating.

⚠CAUTION ***Before removing pump from basin for service, always disconnect electrical power to pump and control switch. For any work on pump or switch, ALWAYS unplug the power cord. Do not just turn off circuit breaker or unscrew fuse.***

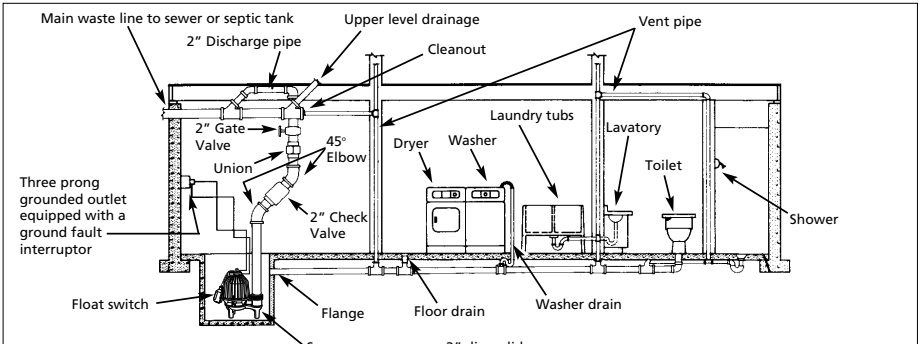


Figure 2 - Typical Installation

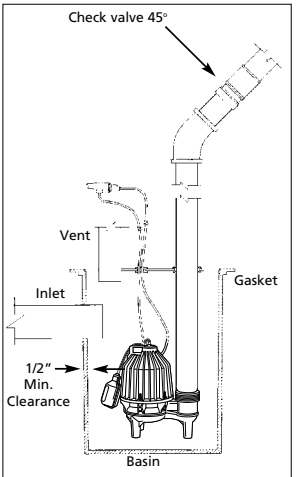


Figure 3 - Prefabricated Basins

Maintenance

⚠WARNING ***Make certain that the pump is unplugged before attempting to service or remove any component. This pump is assembled in the factory using special equipment; therefore only authorized service dealers or qualified electricians should attempt to repair this unit. Improper repair can cause an electrical shock hazard.***

NOTICE ***The pump contains oil that may be under pressure because of heat. Let the pump cool for a minimum of two hours before servicing this unit.***

1. Disassembly of the motor prior to expiration of warranty will void the warranty. It might also cause internal leakage and damage to the unit. If repairs are required, return the pump to the dealer from whom it was purchased or call 1-800-237-0987. If motor is ever disassembled the o-rings must be replaced. Care must be taken to ensure that all seals do not leak.
2. After the basin cover is removed and necessary discharge piping disconnected, lift pump from basin.
3. Pump should be checked on a regular basis for proper operation. If anything has changed since unit was new, the unit should be removed and repaired or replaced. Only qualified electricians or service people should attempt to repair this unit. Improper repair and/or assembly can cause an electrical shock hazard.
4. Place the pump in a suitable area where it can be cleaned thoroughly. Remove all scale and deposits on pump.
5. Submerge the complete pump in a disinfectant solution (10% chlorine bleach solution) for at least one hour before handling the pump.
6. Clean all dirt and deposits from the pump float. Make sure float moves freely after cleaning.
7. Clean all dirt and deposits away from pump inlet and volute.

⚠WARNING ***This pump contains dielectric motor oil for lubrication and motor heat transfer. This oil can be harmful to the environment. Check state environmental laws before disposing of this oil. This oil can be harmful to aquatic life so consideration should be exercised in the application of this pump.***

Limited Warranty

For one year from the date of purchase, Wayne Water Systems ("Wayne") will repair or replace, at its option, for the original purchaser any part or parts of its Sump Pumps or Water Pumps ("Product") found upon examination by Wayne to be defective in materials or workmanship. Please call Wayne (800-237-0987) for instructions or see your dealer. Be prepared to provide the model number and the serial number when exercising this warranty. All transportation charges on Products or parts submitted for repair or replacement must be paid by purchaser.

This Limited Warranty does not cover Products which have been damaged as a result of accident, abuse, misuse, neglect, improper installation, improper maintenance, or failure to operate in accordance with Wayne's written instructions.

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO ONE YEAR FROM THE DATE OF PURCHASE. THIS IS THE EXCLUSIVE REMEDY AND ANY LIABILITY FOR ANY AND ALL INDIRECT OR CONSEQUENTIAL DAMAGES OR EXPENSES WHATSOEVER IS EXCLUDED.

Some states do not allow limitations on how long an implied warranty lasts, or do not allow the exclusions or limitations of incidental or consequential damages, so the above limitations might not apply to you. This limited warranty gives you specific legal rights, and you may also have other legal rights which vary from state to state.

In no event, whether as a result of breach of contract warranty, tort (including negligence) or otherwise, shall Wayne or its suppliers be liable for any special, consequential, incidental or penal damages including, but not limited to loss of profit or revenues, loss of use of the products or any associated equipment, damage to associated equipment, cost of capital, cost of substitute products, facilities, services or replacement power, downtime costs, or claims of buyer's customers for such damages.

You **MUST** retain your purchase receipt along with this form. In the event you need to exercise a warranty claim, you **MUST** send a **copy** of the purchase receipt along with the material or correspondence. Please call Wayne (800-237-0987) for return authorization and instructions.

DO NOT MAIL THIS FORM TO WAYNE. Use this form only to maintain your records.

MODEL NO._____ SERIAL NO._____ INSTALLATION DATE_____

ATTACH YOUR RECEIPT HERE

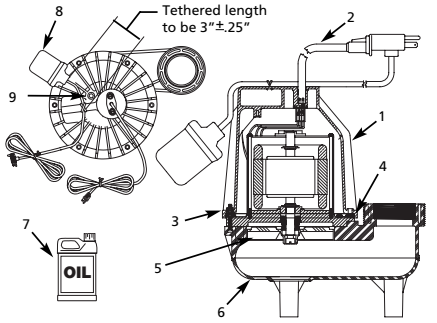
Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Pump will not start or run	1. Water level too low 2. Blown fuse or tripped circuit breaker 3. Low line voltage 4. Defective motor 5. Defective float switch 6. Impeller (pump filled with debris) 7. Tangled switch 8. Insufficient liquid level	1. Pump switch will not turn on unless water covers top of pump 2. If blown, replace with proper sized fuse or reset breaker 3. If voltage is under recommended minimum, check wiring size from the main switch on property. If OK, contact power company. 4. Return for service or replace motor 5. Replace float switch 6. If impeller will not turn, remove housing and remove debris 7. Arrange switch so the switch moves freely. Reposition pump if necessary 8. Make sure liquid level is at least 13" from the basin floor
Pump starts and stops too often	1. Backflow of water from piping 2. Faulty float switch 3. Check valve not installed or leaking 4. Discharge head is less than manufacturer's minimum	1. Install check valve 2. Replace float switch 3. Remove and examine check valve for proper installation and free operation 4. Recheck all sizing calculations to determine proper pump size
Pump shuts off and turns on independently of switch (trips thermal overload protection)	1. Excessive water temperature 2. Defective switch or entangled switch is causing pump to run dry 3. Low line voltage	1. Pump should not be used for water above 120° 2. Replace or reposition pump **⚠CAUTION** ***Pump may start unexpectedly. Disconnect power supply before servicing*** 3. If voltage is under recommended minimum, check wiring size from the main switch on property. If OK, contact power company
Pump operates noisily or vibrates excessively	1. Worn bearings 2. Debris in impeller cavity or broken 3. Piping attachments to building structure too rigid or too loose	1. Return for service or replace 2. Remove housing, clean impeller and/or replace broken impeller 3. Replace portion of discharge pipe with flexible connector
Pump will not shut off	1. Defective float switch 2. Float switch movement restricted 3. Restricted discharge (obstruction in piping) 4. Excessive inflow or pump not properly sized for application	1. Replace float switch 2. Reposition pump or clean basin as required to provide adequate clearance for float 3. Remove pump and clean pump & piping 4. Recheck all sizing calculation to determine proper pump size
Pump operates but delivers little or no water	1. Low line voltage 2. Debris caught in impeller or discharge 3. Worn or defective pump parts or plugged impeller 4. Pump running backwards 5. Pump not properly sized for application 6. Check valve stuck closed or installed backwards 7. Shut off valve closed	1. If voltage is under recommended minimum, check wiring size from the main switch on property. If OK, contact power company 2. Remove, clean and check for tightness 3. Replace worn parts or entire pump. Clean parts if required 4. Check rotation. (CCW from bottom) Return if CW 5. Recheck all sizing calculations to determine proper pump size 6. Remove and examine check valve for proper installation and free operation 7. Open valve

For Replacement Parts, call 1-800-237-0987

Please provide following information:
- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address parts correspondence to:
Wayne Home Equipment
100 Production Drive
Harrison, OH 45030 U.S.A.



Ref No.	Description	Part. No.	Qty.
1	Motor housing	28088-001	1
2	Power cord	31026-001	1
3	#10 x 24 Hex nut	67047-001	6
4	Motor housing gasket	17456-002	1
5	Impeller	17317-001	1
6	Volute	23272-001	1
7	1 Pint Dielectric oil	55932	2.2 pints
8	Mechanical switch kit	60022-001	1
9	1/4" NPT Pipe plug	16356-008	1